

The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

Listing of The Claims:

8. (Currently amended) A nucleic acid encoding a 5'OT-EST polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) the sequences set forth in any one of SEQ ID Nos. 2, 4, or 6; and

(b) an amino acid sequence encoded by a nucleic acid that hybridizes under stringent hybridization conditions to any one of SEQ ID Nos. 1, 3, 5 or 7, or to the complement thereof, wherein said encoded amino acid sequence modulates the obesity of an animal.

~~(b) sequences which are at least 90% homologous, as determined by BLAST analysis using default parameters, to the full length of said sequence set forth in any one of SEQ ID Nos. 2, 4, or 6.~~

9. (Currently amended) The nucleic acid of claim 8, having a sequence selected from the group consisting of SEQ. ID. Nos. 1, 3, 5, 7, 16 or 17, or a nucleic acid sequence that hybridizes under stringent hybridization conditions to any one of said sequences, or to the complement thereof, wherein a polypeptide encoded by a said nucleic acid sequence modulates the obesity of an animal. ~~which is at least 90% homologous to the full length of SEQ ID Nos. 1, 3, 5, 7, 16, or 17, as determined by BLAST analysis using default parameters.~~

10. (Currently amended) The nucleic acid of claim 9, comprising the sequence with SEQ ID NO: 31 or a nucleic acid sequence that hybridizes under stringent hybridization conditions to SEQ ID NO: 31, or to the complement thereof. ~~an equivalent sequence which encodes the same polypeptide having regard to the degeneracy of the nucleic acid code, or a sequence at least 90% homologous thereto over the full length of SEQ ID NO: 31, as determined by BLAST analysis using default parameters.~~

11. (Previously amended) A nucleic acid vector comprising a nucleic acid sequence of any one of claims 8 to 10.

12. (Previously amended) The vector of claim 11, wherein said vector is a cosmid vector.
13. (Previously amended) The vector of claim 11 or 12 further comprising one or more sequences selected from the group consisting of sequences of the coding region of the oxytocin (OT) gene, the coding region of the vasopressin (AVP) gene, or the coding region of the human growth hormone (hGH) gene.
14. (Previously amended) A vector of claim 12, wherein said vector has the structure of cVO14 as set forth in Figure 4 (SEQ. ID. No. 17).
15. (Previously amended) A cell transformed with a vector of any one of claims 11 to 14.
16. (Currently amended) A method for producing a 5'OT-EST polypeptide having a sequence selected from the group consisting of (a) the sequences set forth in any one of SEQ ID Nos. 2, 4, 6, or (b) an amino acid sequence encoded by a nucleic acid that hybridizes under stringent hybridization conditions to any one of SEQ ID Nos. 1, 3, 5 or 7, or to the complement thereof, wherein said encoded amino acid sequence modulates the obesity of an animal,
~~sequences which are at least 90% homologous, as determined by BLAST analysis using default parameters, to the full length of said sequences set forth in any one of SEQ ID Nos. 2, 4, or 6,~~
the method comprising transforming a cell with a vector of any one of claims 11 to 14 and culturing the cell to produce the polypeptide.
28. (Currently amended) A diagnostic reagent ~~for the detection of mutations, polymorphisms or other changes in 5'OT-EST which may predispose an individual to obesity,~~ comprising at least one detectably labeled nucleic acid probe of 5 to 150 nucleotides or less which is capable of hybridizing hybridizes under stringent conditions to a sequence selected from the group consisting of (a) any one of SEQ ID NOs 1, 3 or 5, and (b) a nucleic acid sequence that encodes a polypeptide that modulates the obesity of an animal and that hybridizes under stringent conditions to any one of SEQ ID NOs 1, 3 or 5 or the complement thereof at least 90% identical to the full length of a said sequence as determined by BLAST analysis using default parameters.
30. (Cancelled herein)

31. (Previously amended) The nucleic acid of claim 8, wherein said 5'OT-EST polypeptide, in vivo, modulates the obesity of an animal which expresses said 5'OT-EST polypeptide.
32. (Cancelled herein)
33. (Amended herein) The nucleic acid of any one of claims 8, ~~30~~, or 31 wherein said 5'OT-EST polypeptide comprises the sequence of SEQ ID NO: 37.
34. (Amended herein) The nucleic acid of any one of claims 8, ~~30~~, or 31 wherein said 5'OT-EST polypeptide comprises the sequence of SEQ ID NO: 8.
35. Withdrawn from consideration
36. (New) The diagnostic reagent of claim 28 wherein said at least one detectably labeled nucleic acid probe is 10 to 50 nucleotides in length.